

automatica

A Journal of IFAC the International
Federation of Automatic Control

**Volume Contents, Author and
Key Word Indexes**

Volume 35 (1999)



Pergamon

automatica

A Journal of IFAC the International Federation of Automatic Control

EDITOR-IN-CHIEF

Professor Huibert Kwakernaak
Faculty of Mathematical Sciences
University of Twente

Postal address:
P.O. Box 217, 7500 AE Enschede
The Netherlands

Street address:
Drienerloolaan 5, 7522 NB Enschede
The Netherlands
Tel. +31 53 4893457
Fax +31 53 4340733/4356695
E-mail automatica@math.utwente.nl
http://www.math.utwente.nl/eic

EDITORS

Control and Estimation Theory

(in particular optimal and stochastic control, games, state estimation, and discrete event systems)

Professor Tamer Başar
Deputy Editor-in-Chief
University of Illinois at Urbana-Champaign, Coordinated Science
Laboratory, 1308 West Main Street
Urbana, IL 61801, U.S.A.
Tel. +1 217 333 3607
Fax +1 217 244 1653
E-mail basar-automatica@decision.csl.uiuc.edu

Control System Applications

(including robotics, mechatronics, transportation and vehicles, power systems, scheduling and risk control)

Professor Mituhiko Araki
Department of Electrical Engineering, Kyoto University
Yoshida-Honmachi, Sakyo-ku, Kyoto 606-8501, Japan
Tel. +81 75 753 5332
Fax +81 75 753 5333
E-mail araki@kuee.kyoto-u.ac.jp

Process Control and Computer Control Applications

Professor Sigurd Skogestad
Department of Chemical Engineering
Norwegian University of Science and Technology
N-7034 Trondheim, Norway
Tel. +47 735 94 154/130
Fax +47 735 94 080
E-mail skoge@chembio.ntnu.no

System and Control Theory

(including robust control, distributed parameter systems and control system design)

Dr Roberto Tempo
CENS-CNR, Politecnico di Torino
Corso Duca degli Abruzzi 24
10129 Torino, Italy
Tel. +39 011 564 7034
Fax +39 011 564 7099
E-mail tempo@polito.it

Adaptive and Intelligent Control

Professor F. L. Lewis
Moncrief-O'Donnell Endowed Chair, Automation and Robotics Research
Institute, The University of Texas at Arlington, 7300 Jack Newell Blvd. S,
Ft. Worth, TX 76118-7115, USA
Tel. +1 817 272 5972
Fax +1 817 272 5989
E-mail flewis@controls.uta.edu

Management and Decision Sciences

(including large scale systems, operational research applications of optimisation and control, business and management techniques, economic dynamics, environmental modelling, decision support systems, and conflict resolution)

Professor Alain Haurie
Management Studies (SES-HEC)
University of Geneva
102 Carl Vogt
CH-1211 Geneva
Switzerland
Tel. +41 22 7058132
Fax +41 22 7058104
E-mail haurie@ibm.unige.ch

System Parameter Estimation

(including applications in this field, and new topics such as system fault detection)

Professor Torsten Söderström
Systems and Control Group, Uppsala University
P.O. Box 27, S-751 03 Uppsala, Sweden
Tel. +46 18 183075
Fax +46 18 503611
E-mail ts@syscon.uu.se

Nonlinear Systems and Control

Professor H. K. Khalil
Department of Electrical Engineering, Michigan State University,
East Lansing, MI 48824-1226, USA
Tel. +1 517 355 6689
Fax +1 517 353 1980
E-mail Khalil@ee.msu.edu

SPECIAL CATEGORY EDITORS

Survey Papers

(including all fields in automatic control)

Professor Manfred Morari
Automatic Control Laboratory, ETH-Zentrum/ETL I 29
CH-8092 Zürich, Switzerland
Tel. +41 1 632 7626
Fax +41 1 632 1211
E-mail morari-automatica@aut.ee.ethz.ch

Rapid Publications

Technical Communiques and Correspondence
(in all fields of control)

Professor Paul Van den Hof
Signals, Systems and Control Group
Department of Applied Physics, Delft University of Technology,
Lorentzweg 1, 2628 CJ Delft, The Netherlands
Tel. +31 15 2784509
Fax +31 15 2784263
E-mail vdhof-automatica@tn.tudelft.nl

Book Reviews

(in all areas of interest related to automatic control)

Professor R. Sivan
Technion, Israel Institute of Technology,
Department of Electrical Engineering, Haifa 32000, Israel
Tel. +972 48 294740
Fax +972 48 323041
E-mail r.sivan@ee.technion.ac.il



PERGAMON

Automatica 35 (1999) V-XII



www.elsevier.com/locate/automatica

Volume Contents

Number 1 — January

EDITORIAL

- | | | |
|---------------|---|----------------------------|
| H. Kwakernaak | 1 | Two editorial appointments |
|---------------|---|----------------------------|

REGULAR PAPERS

- | | | |
|-----------------------------|----|---|
| T.I. Fossen and J.P. Strand | 3 | Passive nonlinear observer design for ships using Lyapunov methods: full-scale experiments with a supply vessel |
| F. Bullo and R.M. Murray | 17 | Tracking for fully actuated mechanical systems: a geometric framework |
| W. Lin and T. Shen | 35 | Robust passivity and feedback design for minimum-phase nonlinear systems with structural uncertainty |

BRIEF PAPERS

- | | | |
|---|-----|--|
| L. Jetto and S. Longhi | 49 | Assigning closed-loop invariant polynomials over polytopes for linear periodic systems |
| N.-S. Xu and Z.-H. Yang | 59 | Predictive structural control based on dominant internal model approach |
| A.V. Savkin, E. Skafidas and R.J. Evans | 69 | Robust output feedback stabilizability via controller switching |
| A. Ferrante, W. Krajewski, A. Lepschy and U. Viaro | 75 | Convergent algorithm for L_2 model reduction |
| L.Y. Pao | 81 | Multi-input shaping design for vibration reduction |
| J. Schoukens, R. Pintelon and Y. Rolain | 91 | Study of conditional ML estimators in time and frequency-domain system identification |
| M. Valášek and N. Olgaç | 101 | Pole placement for linear time-varying non-lexicographically fixed MIMO systems |
| Ye Xudong | 109 | Universal λ -tracking for nonlinearly-perturbed systems without restrictions on the relative degree |
| K.-H. Cho and J.-T. Lim | 121 | Mixed centralized/decentralized supervisory control of discrete event dynamic systems |
| L. G. Van Willigenburg and W. L. De Koning | 129 | Optimal reduced-order compensation of time-varying discrete-time systems with deterministic and white parameters |
| G.A. Rovithakis, V.I. Gaganis, S.E. Perrakis and M.A. Christodoulou | 139 | Real-time control of manufacturing cells using dynamic neural networks |
| V. Kecman, S. Bingulac and Z. Gajic | 151 | Eigenvector approach for order reduction of singularly perturbed linear-quadratic optimal control problems |

TECHNICAL COMMUNIQUE

- | | | |
|-----------------------------------|-----|---|
| M. Eslami | 159 | Robustness measures in nonlinear discrete-time systems with delays and large-parameter variations |
| I.N. Kar | 169 | Design of static output feedback controller for uncertain systems |
| R.-F. Fung, J.-W. Wu and S.-L. Wu | 177 | Exponential stabilization of an axially moving string by linear boundary feedback |
| J. Tsinias | 183 | Global stabilization by output dynamic feedback for triangular systems |

Number 2 — February

		EDITORIAL	
H. Kwakernaak	187	<i>New: electronic submissions of papers for review</i>	
		REGULAR PAPERS	
J.H. Braslavsky, M.M. Seron, D.Q. Mayne and P.V. Kokotović	189	Limiting performance of optimal linear filters	
Y. Ohta and A. Kojima	201	Formulas for Hankel singular values and vectors for a class of input delay systems	
		BRIEF PAPERS	
J. Darlington, C.C. Pantelides, B. Rustem and B.A. Tanyi	217	An algorithm for constrained nonlinear optimization under uncertainty	
W. Kang, G. Gu, A. Sparks and S. Banda	229	Bifurcation test functions and surge control for axial flow compressors	
J. Evans and V. Krishnamurthy	241	Optimal filtering of doubly stochastic auto-regressive processes	
L.H. Keel and S.P. Bhattacharyya	251	A new proof of the Jury test	
O.L.V. Costa, J.B.R. do Val and J.C. Geromel	259	Continuous-time state-feedback H_2 -control of Markovian jump linear systems via convex analysis	
S.O. Reza Moheimani, H.R. Pota and I.R. Petersen	269	Spatial balanced model reduction for flexible structures	
A. İftar	279	A linear programming based decentralized routing controller for congested highways	
D.D. Sworder and J.E. Boyd	293	Control of linear jump systems in noise	
S.P. Coraluppi and S.I. Marcus	301	Risk-sensitive and minimax control of discrete-time, finite-state Markov decision processes	
Y. Wu and X. Yu	311	Variable structure control design for uncertain dynamic systems with disturbances in input and output channels	
Y. Zhang, C. Wen and Y.C. Soh	321	Robust adaptive control of uncertain discrete-time systems	
M. Deng and Y.-C. Ho	331	An ordinal optimization approach to optimal control problems	
		TECHNICAL COMMUNIQUE	
J.Y. Keller and M. Darouach	339	Two-stage Kalman estimator with unknown exogenous inputs	
	343	Book review	

Number 3 — March

		EDITORIAL	
A. S. Morse	347	Introduction to the special issue on hybrid systems	
		SPECIAL SECTION	
J. Lygeros, C. Tomlin and S. Sastry	349	Controllers for reachability specifications for hybrid systems	
A. N. Michel and Bo Hu	371	Towards a stability theory of general hybrid dynamical systems	
J. P. Hespanha and A. S. Morse	385	Stabilization of nonholonomic integrators via logic-based switching	
J. Lunze, B. Nixdorf and J. Schröder	395	Deterministic discrete-event representations of linear continuous-variable systems	
A. Bemporad and M. Morari	407	Control of systems integrating logic, dynamics, and constraints	
J. A. Ball, M. V. Day, T. Yu and P. Kachroo	429	Robust L_2 -gain control for nonlinear systems with projection dynamics and input constraints: an example from traffic control	
G. Escobar, A. J. van der Schaft and R. Ortega	445	A Hamiltonian viewpoint in the modeling of switching power converters	
M. H. Chang and E. J. Davison	453	Adaptive switching control of LTI MIMO systems using a family of controllers approach	
Y. J. Lootsma, A. J. van der Schaft and M. K. Çamlıbel	467	Uniqueness of solutions of linear relay systems	

V. D. Blondel and J. N. Tsitsiklis	479	Complexity of stability and controllability of elementary hybrid systems
C. J. Bett and M. D. Lemmon	491	Bounded amplitude performance of switched LPV systems with applications to hybrid systems
S. Kowalewski, S. Engell, J. Preußig and O. Stursberg	505	Verification of logic controllers for continuous plants using timed condition/event-system models
A. Balluchi, M. D. Di Benedetto, C. Pinello, C. Rossi and A. Sangiovanni-Vincentelli	519	Hybrid control in automotive applications: the cut-off control

Number 4 — April

EDITORIAL

H. Kwakernaak	537	New editorial areas and appointments
---------------	-----	--------------------------------------

REGULAR PAPERS

K.H. Johansson, A. Rantzer and K.J. Åström	539	Fast switches in relay feedback systems
E. Skafidas, R.J. Evans, A.V. Savkin and I.R. Petersen	553	Stability results for switched controller systems
M.L. Tyler and M. Morari	565	Propositional logic in control and monitoring problems

BRIEF PAPERS

P. Milliken, C. Marsh and B. van Brunt	583	Minimax controller design for a class of uncertain linear systems
J.-P. Le Cadre and S. Laurent-Michel	591	Optimizing the receiver maneuvers for bearings-only tracking
Q.P. Ha, D.C. Rye and H.F. Durrant-Whyte	607	Fuzzy moving sliding mode control with application to robotic manipulators
O.L.V. Costa, E.O. Assumpção Filho, E.K. Boukas and R.P. Marques	617	Constrained quadratic state feedback control of discrete-time Markovian jump linear systems
L. Jaulin and J. Burger	627	Proving set inclusion via intervals: application to parametric robust stability
A.V. Rao and K.D. Mease	633	Dichotomic basis approach to solving hyper-sensitive optimal control problems
A. Espada and A. Barreiro	643	Robust stability of fuzzy control systems based on conicity conditions
N. Linard, B. Anderson and F. De Bruyne	655	Identification of a nonlinear plant under nonlinear feedback using left coprime fractional based representations
A. Giua, C. Seatzu and G. Usai	669	Observer-controller design for cranes via Lyapunov equivalence
I.E. Kose and F. Jabbari	679	Robust control of linear systems with real parametric uncertainty
P. Hippe and C. Wurmthaler	689	Systematic closed-loop design in the presence of input saturations
W. Su, L. Xie and C.E. de Souza	697	Global robust disturbance attenuation and almost disturbance decoupling for uncertain cascaded nonlinear systems
Z. Lin, X. Bao and B.M. Chen	709	Further results on almost disturbance decoupling with global asymptotic stability for nonlinear systems

TECHNICAL COMMUNIQUE

W. Zhang, X. Xu and Y. Sun	719	Quantitative performance design for integrating processes with time delay
K. Park, Y.-S. Cho, J.-S. Lee and K. Kang	725	Wiener-Hopf approach to derivation of rational doubly coprime factorizations
Y. Yamamoto, A.G. Madievski and B.D.O. Anderson	729	Approximation of frequency response for sampled-data control systems
H.D. Tuan and S. Hosoe	735	On linear robust \mathcal{H}_∞ controllers for a class of nonlinear singular perturbed systems
S.S. Ge, C.C. Hang and T. Zhang	741	A direct adaptive controller for dynamic systems with a class of nonlinear parameterizations
M.S. Mahmoud, Y.C. Soh and L. Xie	749	Observer-based positive real control of uncertain linear systems
B.H. Wilson and B. Eryilmaz	755	Simplified tree-structured decomposition using bond graphs
C. Edwards and I. Postlethwaite	761	An anti-windup scheme with closed-loop stability considerations

Number 5 — May

		REGULAR PAPERS
A. Garulli, A. Vicino and G. Zappa	767	Optimal induced-norm and set membership state smoothing and filtering for linear systems with bounded disturbances
A.S. Poznyak and K. Najim	777	Adaptive control of constrained finite Markov chains
H. Fan	791	Singular root distribution problem for delta-operator based real polynomials
F. Blanchini and E.P. Ryan	809	A Razumikhin-type lemma for functional differential equations with application to adaptive control
		BRIEF PAPERS
J. Yu and A. Sideris	819	Optimal induced l^1 -norm state feedback control
S. Battilotti	829	Sufficient conditions for global output regulation of nonlinear interconnected systems
J.-M. Godhavn, A. Balluchi, L.S. Crawford and S.S. Sastry	837	Steering of a class of nonholonomic systems with drift terms
L. Jaulin and E. Walter	849	Guaranteed parameter bounding for nonlinear models with uncertain experimental factors
G.C. Goodwin, A.R. Woodyatt, R.H. Middleton and J. Shim	857	Fundamental limitations due to $j\omega$ -axis zeros in SISO systems
J.H. Seo, C.H. Jo and S.-H. Lee	865	Decentralized H_∞ -controller design
R.H. Middleton and S.F. Graebe	877	Slow stable open-loop poles: to cancel or not to cancel
S.H. Zad and M.-A. Massoumnia	887	Generic solvability of the failure detection and identification problem
L. Mirkin and Z.J. Palmor	895	On the sampled-data H^∞ filtering problem
P.M. Mäkilä and J.R. Partington	907	On robustness in system identification
M.V. Kothare and M. Morari	917	Multiplier theory for stability analysis of anti-windup control systems
Y. Xudong	929	Asymptotic regulation of time-varying uncertain nonlinear systems with unknown control directions
S. Nishida, M. Nakamura, K. Shindo, M. Kanda and H. Shibasaki	937	A morphological filter for extracting waveform characteristics of single-sweep evoked potentials
		TECHNICAL COMMUNIQUE
C. Verde	945	On the use of sensitivity functions to design dead-beat control algorithm
Z. Gajic and R. Losada	951	Solution of the state-dependent noise optimal control problem in terms of Lyapunov iterations
Z. Wang, B. Huang and H. Unbehauen	955	Robust reliable control for a class of uncertain nonlinear state-delayed systems
Y. Rolain and R. Pintelon	965	Generating robust starting values for frequency-domain transfer function estimation
K. Hui and C.W. Chan	973	Noise attenuation of compensators for rate and amplitude constrained systems
H. Xia and S. Veres	981	Improved efficiency of adaptive robust control by model unfalsification
X. Liu, G. Gu and K. Zhou	987	Robust stabilization of MIMO nonlinear systems by backstepping

Number 6 — June

		REGULAR PAPERS
C. Heij and W. Scherrer	993	Consistency of system identification by global total least squares
A. C. Antoulas and B. D. O. Anderson	1009	On the choice of inputs in identification for robust control
S. Peresada, A. Tonielli and R. Morici	1033	High-performance indirect field-oriented output-feedback control of induction motors
B. Kacewicz	1049	Worst-case conditional system identification in a general class of norms
R. L. M. Peeters and B. Hanzon	1059	Symbolic computation of Fisher information matrices for parametrized state-space systems

BRIEF PAPERS

L. Guo and M. Tomizuka	1073	Parameter identification with derivative shift operator parametrization
J. S. Shamma and D. Xiong	1081	Set-valued methods for linear parameter varying systems
D. Aeyels and J. Peuteman	1091	On exponential stability of nonlinear time-varying differential equations
U. D. Hanebeck, J. Horn and G. Schmidt	1101	On combining statistical and set-theoretic estimation
J. Langer and I. D. Landau	1111	Combined pole placement/sensitivity function shaping method using convex optimization criteria
A. J. Isaksson and S. F. Graebe	1121	Analytical PID parameter expressions for higher order systems
Z.-P. Jiang	1131	A combined backstepping and small-gain approach to adaptive output feedback control

TECHNICAL COMMUNIQUE

R. J. Mantz, P. F. Puleston and H. De Battista	1141	Output overshoots in systems with integral action operating in sliding mode
B. Lee and J. G. Lee	1149	Robust stability and stabilization of linear delayed systems with structured uncertainty
L. Yu and J. Chu	1155	An LMI approach to guaranteed cost control of linear uncertain time-delay systems
Z. Wang, B. Huang and H. Unbehauen	1161	Robust H_∞ observer design of linear state delayed systems with parametric uncertainty: the discrete-time case
J. R. Corrado, W. M. Haddad and D. S. Bernstein	1169	\mathcal{H}_2 -optimal synthesis of controllers with relative degree two
G. Fenu and T. Parisini	1175	A note on nonparametric kernel smoothing for model-free fault symptom generation
	1181	Book reviews

Number 7 — July

REGULAR PAPERS

G. Weiss and M. Häfele	1185	Repetitive control of MIMO systems using H^∞ design
R. Wiśniewski and M. Blanke	1201	Fully magnetic attitude control for spacecraft subject to gravity gradient
U. Forssell and L. Ljung	1215	Closed-loop identification revisited
D. Bauer, M. Deistler and W. Scherrer	1243	Consistency and asymptotic normality of some subspace algorithms for systems without observed inputs
F.J. Vázquez-Abad	1255	Strong points of weak convergence: a study using RPA gradient estimation for automatic learning

BRIEF PAPERS

B.G. Romanchuk and M.C. Smith	1275	Incremental gain analysis of piecewise linear systems and application to the antiwindup problem
D. Angeli	1285	Input-to-state stability of PD-controlled robotic systems
M. de Mathelin and R. Lozano	1291	Robust adaptive identification of slowly time-varying parameters with bounded disturbances
G.L. Santosuosso	1307	Robust regulation with minimal parametrization for a class of nonlinear systems
C.E. de Souza and X. Li	1313	Delay-dependent robust \mathcal{H}_∞ control of uncertain linear state-delayed systems
M.L. Psiaki	1323	Square-root information filtering and fixed-interval smoothing with singularities
	1333	Book reviews

Number 8 — August

REGULAR PAPERS

- | | | |
|-----------------------------|------|---|
| A. Banaszuk and A.J. Krener | 1343 | Design of controllers for MG3 compressor models with general characteristics using graph backstepping |
|-----------------------------|------|---|

BRIEF PAPERS

- | | | |
|--|------|--|
| V. Drăgan, P. Shi and E.-K. Boukas | 1369 | Control of singularly perturbed systems with Markovian jump parameters: an H_∞ approach |
| M.S. de Queiroz, D.M. Dawson and M. Agarwal | 1379 | Adaptive control of robot manipulators with controller/update law modularity |
| A. Besançon-Voda and G. Besançon | 1391 | Analysis of a two-relay system configuration with application to Coulomb friction identification |
| H.W.J. Lee, K.L. Teo, V. Rehbock and L.S. Jennings | 1401 | Control parametrization enhancing technique for optimal discrete-valued control problems |
| V.O. Nikiforov | 1409 | Robust high-order tuner of simplified structure |
| M. Makoudi and L. Radouane | 1417 | Robust decentralized adaptive control for non-minimum phase systems with unknown and/or time varying delay |
| L. Wang, M.L. Desarmo and W.R. Cluett | 1427 | Real-time estimation of process frequency response and step response from relay feedback experiments |

TECHNICAL COMMUNIQUE

- | | | |
|--------------------------------------|------|--|
| E.K. Boukas and H. Yang | 1437 | Exponential stabilizability of stochastic systems with Markovian jumping parameters |
| J.H. Kim and H.B. Park | 1443 | H^∞ state feedback control for generalized continuous/discrete time-delay system |
| E.N. Antoniou and A.I.G. Vardoulakis | 1453 | A note on the action of constant pseudostate feedback on the internal properness of an ARMA model |
| P.K. Sinha and A.N. Pechev | 1457 | Model reference adaptive control of a maglev system with stable maximum descent criterion |
| T. Leephakpreeda | 1467 | H_∞ stability robustness of fuzzy control systems |
| L.-X. Wang | 1471 | Automatic design of fuzzy controllers |
| D.D. Šiljak and D.M. Stipanović | 1477 | Robust D -stability via positivity |
| M.K. Tippet and D. Marchesin | 1485 | Upper bounds for the solution of the discrete algebraic Lyapunov equation |
| C.Y. Chan | 1491 | Discrete adaptive sliding-mode control of a class of stochastic systems |
| M. Makoudi and L. Radouane | 1499 | A robust decentralized model reference adaptive control for non-minimum-phase interconnected systems |

Number 9 — September

REGULAR PAPERS

- | | | |
|---|------|--|
| P. Bolzern, P. Colaneri and G. De Nicolao | 1509 | H_∞ -robustness of adaptive filters against measurement noise and parameter drift |
| C.G. Panayiotou and C.G. Cassandras | 1521 | Optimization of kanban-based manufacturing systems |

BRIEF PAPERS

- | | | |
|---|------|---|
| J.-X. Xu, Y. Chen, T.H. Lee and S. Yamamoto | 1535 | Terminal iterative learning control with an application to RTPCVD thickness control |
| M. Kuijper | 1543 | A periodically time-varying minimal partial realization algorithm based on twisting |
| J.J. Loiseau, P. Zagalak and V. Kučera | 1549 | Pole structure assignment via non-regular static state feedback |

Z. Tan, Y.C. Soh and L. Xie	1557	Dissipative control for linear discrete-time systems
T. Söderström	1565	Feedforward, correlated disturbances and identification
TECHNICAL COMMUNIQUE		
J.Y. Ishihara and R.M. Sales	1573	Doubly coprime factorizations related to any stabilizing controllers in state space
W.K. Ho, K.W. Lim, C.C. Hang and L.Y. Ni	1579	Getting more phase margin and performance out of PID controllers
S.-H. Song, J.-K. Kim, C.-H. Yim and H.-C. Kim	1587	H_∞ control of discrete-time linear systems with time-varying delays in state
S.-T. Wu	1593	Dynamic transfer between sliding control and internal model control
D. Henrion and S. Tarbouriech	1599	LMI relaxations for robust stability of linear systems with saturating controls
D. Famularo, P. Pugliese and Ya.D. Sergeyev	1605	A global optimization technique for checking parametric robustness
S. Xu and C. Yang	1613	Stabilization of discrete-time singular systems: a matrix inequalities approach
F. Amato and A. Pironti	1619	\mathcal{H}^∞ optimal terminal state control for linear systems with lumped and distributed time delays
E.-K. Boukas and P. Shi	1625	H_∞ control for discrete-time linear systems with Frobenius norm-bounded uncertainties

Number 10 — October

EDITORIAL

R. Ortega	1633	Automatica prize paper awards 1999
-----------	------	------------------------------------

REGULAR PAPER

T. Katayama and G. Picci	1635	Realization of stochastic systems with exogenous inputs and subspace identification methods
--------------------------	------	---

BRIEF PAPERS

T. Oliveira e Silva	1653	On the asymptotic eigenvalue distribution of block-Toeplitz matrices related to the generalized orthonormal basis functions model
M. Ashhab, M.V. Salapaka, M. Dahleh and I. Mezić	1663	Dynamical analysis and control of microcantilevers
P. Albertos, R. Sanchis and A. sala	1671	Output prediction under scarce data operation: control applications
V. Hovelaque, C. Commault and J.M. Dion	1683	Zeros of structured linear systems
A. Cavallo, G. De Maria and R. Setola	1689	A sliding manifold approach for vibration reduction of flexible systems

TECHNICAL COMMUNIQUE

R. Lozano, A. Valera, P. Albertos, S. Arimoto and T. Nakayama	1697	PD control of robot manipulators with joint flexibility, actuators dynamics and friction
J.-Y. Keller	1701	Fault isolation filter design for linear stochastic systems
H.H. Choi	1707	On the existence of linear sliding surfaces for a class of uncertain dynamic systems with mismatched uncertainties
L.H. Keel and S.P. Bhattacharyya	1717	Robust stability and performance with fixed-order controllers
K.-H. Cho and J.-T. Lim	1725	On-line tracing supervisory control of discrete-event dynamic systems based on outlooking
S. Preitl and R.-E. Precup	1731	An extension of tuning relations after symmetrical optimum method for PI and PID controllers
R.L. Estrada and J.C. Martínez-García	1737	Fixed poles and disturbance rejecting feedback synthesis
	1741	Book reviews

Number 11 — November

		SURVEY PAPER
F. Blanchini	1747	Set invariance in control
		REGULAR PAPER
J.S. Evans and R.J. Evans	1769	Image-enhanced multiple model tracking
		BRIEF PAPERS
A. Gambier and H. Unbehauen	1787	Multivariable generalized state-space receding horizon control in a real-time environment
J.N. Tsitsiklis and B. Van Roy	1799	Average cost temporal-difference learning
T. Zhang, S.S. Ge and C.C. Hang	1809	Design and performance analysis of a direct adaptive controller for nonlinear systems
J.B.R. do Val and J.L.F. Salles	1819	Optimal production with preemption to meet stochastic demand
M. Kinnaert	1829	Robust fault detection based on observers for bilinear systems
		TECHNICAL COMMUNIQUE
B.A. León de la Barra and R. Prieto	1843	On the frequency response of scalar discrete-time systems
Y.S. Suh	1855	Diagonal balanced truncation of discrete delay systems
Y.-H. Roh and J.-H. Oh	1861	Robust stabilization of uncertain input-delay systems by sliding mode control with delay compensation
F. De Bruyne, B.D.O. Anderson, M. Gevers and N. Linard	1867	Gradient expressions for a closed-loop identification scheme with a tailor-made parametrization
M. El Adel, M. Makoudi and L. Radouane	1873	Decentralized adaptive control of linear interconnected systems based on Laguerre series representation
	1883	Book Reviews

Number 12 — December

		EDITORIALS
V. Anantharam and J. Walrand	1891	Special issue on control methods for communication networks —introduction
H. Kwakernaak	1893	Mituhiko Araki succeeds Editor Katsuhisa Furuta
		SPECIAL SECTION
B. Francis and S. Dasgupta	1895	Signal compression by subband coding
B. Prabhakar and N. McKeown	1909	On the speedup required for combined input-and output-queued switching
S. Mascolo	1921	Congestion control in high-speed communication networks using the Smith principle
E. Altman, T. Başar and R. Srikant	1937	Congestion control as a stochastic control problem with action delays
I. Ch. Paschalidis	1951	Class-specific quality of service guarantees in multimedia communication networks
R. J. Gibbens and F. P. Kelly	1969	Resource pricing and the evolution of congestion control
S. V. Hanly and D.-N. Tse	1987	Power control and capacity of spread spectrum wireless networks
L. Tassiulas and C.-J. Su	2013	Information delivery through broadcasting in satellite communication networks

